

Journal of

Computational Physics

VOLUME 31, 1979



Academic Press

New York and London

A Subsidiary of Harcourt Brace Jovanovich, Publishers

Copyright © 1979 by Academic Press, Inc.

All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (Operations Staff, P.O. Box 765, Schenectady, New York 12301) for copying beyond that permitted by Sections 107 or 108 of the U. S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1979 articles are the same as those shown for current articles.

Printed by the St. Catherine Press, Ltd., Bruges, Belgium

CONTENTS OF VOLUME 31

NUMBER 1, APRIL 1979

REVIEW

CLIVE TEMPERTON. Direct Methods for the Solution of the Discrete Poisson Equation: Some Comparisons.	1
R. J. RIDDELL, JR. Boundary-Distribution Solution of the Helmholtz Equation for a Region with Corners.	21
ROBERT J. RIDDELL, JR. Numerical Solution of the Helmholtz Equation for Two Dimensional Polygonal Regions.	42
Z. SCHULTEN, D. G. M. ANDERSON AND ROY G. GORDON. An Algorithm for the Evaluation of the Complex Airy Functions.	60
GREGORY R. BAKER. The "Cloud in Cell" Technique Applied to the Roll Up of Vortex Sheets.	76
GRAEME FAIRWEATHER, FRANK J. RIZZO, DAVID J. SHIPPY, AND YENSEN S. WU. On the Numerical Solution of Two-Dimensional Potential Problems by an Improved Boundary Integral Equation Method.	96
M. FORTIN AND F. THOMASSET. Mixed Finite-Element Methods for Incompressible Flow Problems.	113

NOTE

RIHO TERRAS. The Determination of Incomplete Gamma Functions Through Analytic Integration.	146
LIST OF FORTHCOMING ARTICLES.	152

NUMBER 2, MAY 1979

TUNCER CEBECI. The Laminar Boundary Layer on a Circular Cylinder Started Impulsively from Rest.	153
M. J. FRITTS AND J. P. BORIS. The Lagrangian Solution of Transient Problems in Hydrodynamics Using a Triangular Mesh.	173
L. E. ALSOP, A. S. GOODMAN, F. G. GUSTAVSON, AND W. L. MIRANKER. A Numerical Solution of a Model for a Superconductor Field Problem.	216
W. R. MOREAU. A Vector Perturbation Series Based upon a Representation in a Finite Banach Space.	240
MURLI M. GUPTA AND RAM P. MANOHAR. Boundary Approximations and Accuracy in Viscous Flow Computations.	265

NOTES

K. SRINIVAS AND J. GURURAJA. An Improved Form of the Artificial Diffusion Parameter- χ	289
---	-----

P. DE A. P. MARTINS. Determination of Large-Order Spherical Coulomb Functions with an Argument Lying between the Origin and the Common Point of Inflection.	293
---	-----

LIST OF FORTHCOMING ARTICLES.	300
---------------------------------------	-----

NUMBER 3, JUNE 1979

G. T. DAVIDSON. Pitch Angle Diffusion of Trapped Particles in the Presence of a Loss Cone: Calculating the Distribution of Particles Precipitating from the Earth's Radiation Belts.	301
ALEKSEI I. SHESTAKOV. A Hybrid Vortex-ADI Solution for Flows of Low Viscosity.	313
STEVEN T. ZALESAK. Fully Multidimensional Flux-Corrected Transport Algorithms for Fluids.	335
T. CEBECI, H. B. KELLER, AND P. G. WILLIAMS. Separating Boundary-Layer Flow Calculations.	363
J. N. LEBOEUF, T. TAJIMA, AND J. M. DAWSON. A Magnetohydrodynamic Particle Code for Fluid Simulation of Plasmas.	379
R. B. WHITE. An Interactive Code for Solving Differential Equations Using Phase Integral Methods.	409
JAMES B. ANDERSON AND BART H. FREIHAUT. Quantum Chemistry by Random Walk: Method of Successive Corrections.	425

NOTE

J. STEPPER. Difference Schemes with Uniform Second and Third Order Accuracy and Reduced Smoothing.	438
LIST OF FORTHCOMING ARTICLES.	450
AUTHOR INDEX FOR VOLUME 31.	451

